

# Technology for EAP - insights into technology- enhanced EAP provision in Hong Kong and Australia

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# What do I work on?

Research interests include:

- Corpus linguistics,
- Second Language Writing
- English for Academic Purposes
- Second Language Acquisition
- TESOL
- (new) Generative Ai

The intersection of these – Data-driven Learning (DDL)



## **CORPORA FOR LANGUAGE LEARNING**

**BRIDGING THE RESEARCH-PRACTICE DIVIDE**

Edited by  
**PETER CROSTHWAITE**





# Language data for language learning? Examples of textbook language (Gilmore, 2004, and ChatGPT, 2024)

give me an example short dialogue representative of old contrived EFL textbook language

Akiko: Is this your first visit to Japan?

Miss Fields: Yes, it is.

Hideo: Do you like Japan?

Miss Fields: Yes I do. Japan is really clean and safe.

Takeshi: Where do you live in Canada?

Miss Fields: I live in Toronto.



Sure! Here's an example of an old, contrived EFL textbook dialogue:

## At the Post Office

A: Hello, can I help you?

B: Yes, I would like to send this letter to England, please.

A: Certainly. Would you like to send it by air mail or surface mail?

B: Air mail, please. How much will it cost?

A: It will cost \$2.50.

B: Here you are.

A: Thank you. Your letter will arrive in about a week.

B: Thank you. Goodbye!

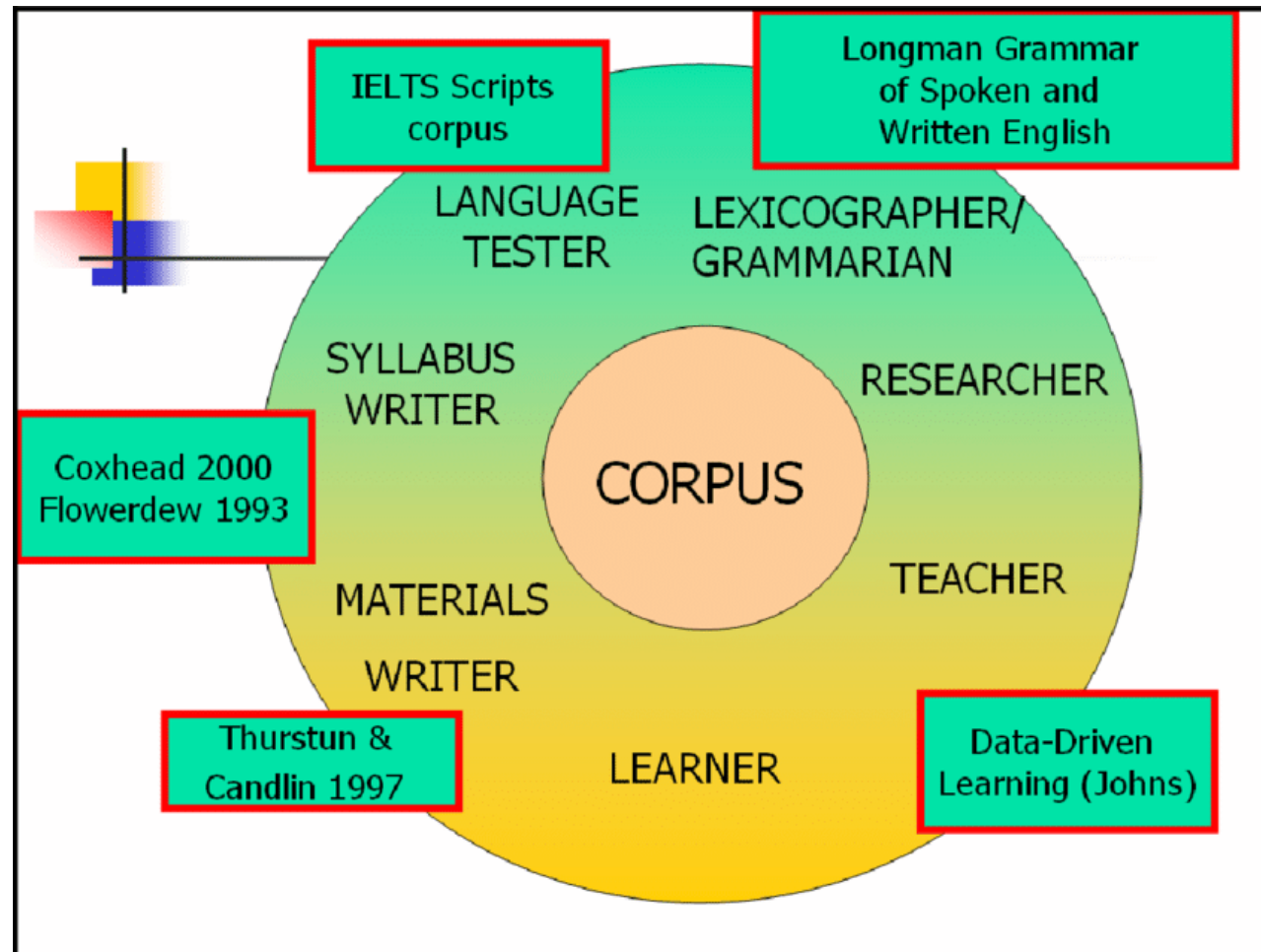
A: Goodbye!

This kind of dialogue often lacks natural flow and doesn't reflect the way people actually converse in real-life situations, especially with over-formality and limited vocabulary.

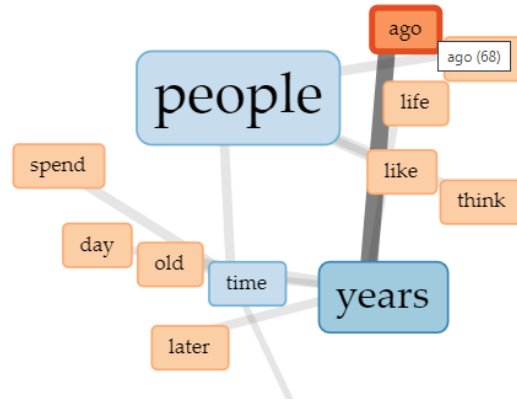




# Corpora for education



# How does it work?



v. death penalty

face death penalty

seek death penalty

faces death penalty


replacing death penalty

	Word	Word	Word	↓ Frequency	Frequency per million	
1	are	shown	in	16	1.92	...
2	show	that	the	15	1.80	...
3	obtained	from	the	10	1.20	...
4	.	However	,	10	1.20	...
5	of	this	study	9	1.08	...
6	indicate	that	the	9	1.08	...
7	.	This	is	9	1.08	...
8	can	be	seen	8	0.96	...
9	.	It	is	8	0.96	...

ple results 4,739 (568.48 per million) | Sort GDEX x

Details

- ① Methodology recount im comparable with the rest of the data. </s><s> The values for absorption are shown in th
- ① Methodology recount nd moment of mass will be. </s><s> Assumption made during the experiment will significa
- ① Methodology recount ample, this phase would have shown quite the opposite result. </s><s> The second phase
- ① Methodology recount es obtained. </s><s> This is especially true for the larger discs. </s> 6.0 Conclusions <s>
- ① Methodology recount . </s><s> These are marked on the graph as phases four and five respectively. </s><s> TI
- ① Methodology recount ppearance of the colonies of each species is also described in section five of the appendix.
- ① Methodology recount </s><s> The calculations for the serial dilutions are shown in section two of the appendix.
- ① Methodology recount ds. </s><s> It would be beneficial to change one or more of the fixed variables to see whet
- ① Methodology recount s><s> By having a means of directly measuring the angular acceleration might improve th

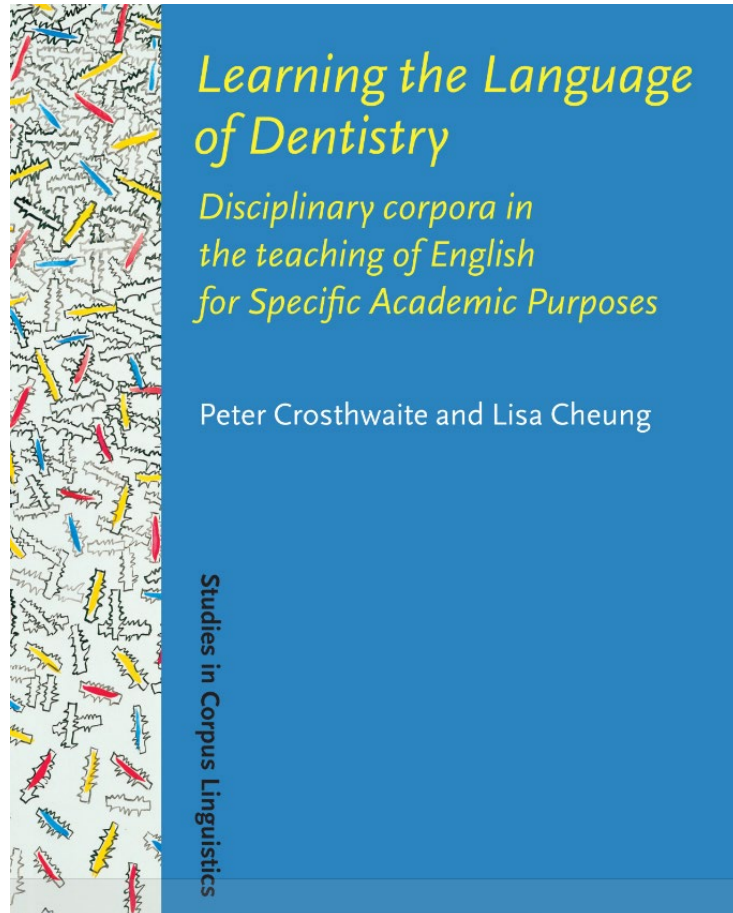


# What kind of questions can we answer with DDL?

- Teacher, what does X mean?
- Teacher, is it true that...?
- Teacher, which word goes together with...?
- Teacher, why is this an error? How do I correct it?
- Teacher, is my writing academic enough?
- Teacher, is this word used for speaking or writing?
- Teacher, do people usually say X or Y?
- ...And many more...!



# HKU use cases (Crosthwaite & Cheung, 2019; Crosthwaite, Wong & Cheung, 2019)



CAES9350

Student Course Booklet (2017-18)

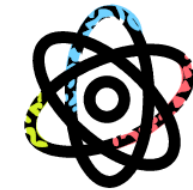


Centre for Applied English Studies  
The University of Hong Kong

GRSC6021

Introduction to Thesis Writing

(Sciences and the Related Disciplines)



Centre for Applied English Studies  
The University of Hong Kong



The following methodology section is abridged from the one in a paper entitled “Relationship between impulsive sensation seeking traits, smoking, alcohol and caffeine intake, and Parkinson’s diseases”. Complete the passage with the appropriate verb form.

## METHODS

### Patients

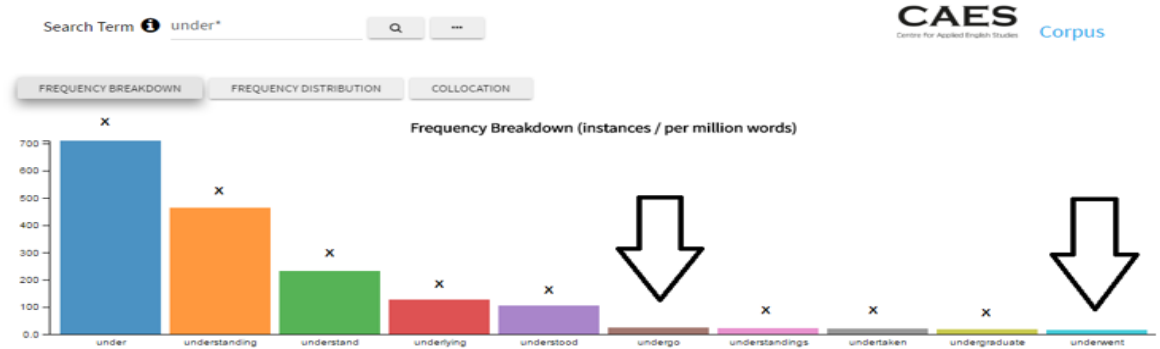
Consecutive outpatients of Caucasian descent fulfilling Queen Square Brain Bank criteria for PD<sup>18</sup> \_\_\_\_\_ **(undergo)** a Mini-Mental State Examination<sup>19</sup> (MMSE) administered by the examining physician and \_\_\_\_\_ **(invite)** to participate if the MMSE score was >26. We \_\_\_\_\_ **(exclude)** patients with significant cognitive decline because of the requirement to complete the behavioural and depression rating scales. The Unified Parkinson’s Disease Rating Scale (UPDRS)<sup>20</sup> part II \_\_\_\_\_ **(rate)** for the “on” state and patients provided a list of all current medications and their dosages. Demographic data including age, sex, and age at onset of symptoms of PD \_\_\_\_\_ **(also collect)**.

## p.74 - Tense and voice in the methodology chapter

Using corpora to resolve morphosyntax

Use the wildcard \* after a word’s base form as well as the frequency breakdown and collocation functions to get an idea about which tense to use for each verb in the extract. Note that some of these verbs will be in the passive voice, requiring the addition of the correct ‘be’ verb. Also use the wildcard \* before the search item to represent the verb-to-be if necessary, and check the ‘methodology’ section. The first has been done for you:

- 1) Under\*, click ‘frequency breakdown’. Two phrases are possible from the available options. Click on either, and use the concordance lines to make a decision.



- 2) [were] Invite **[invited]**
- 3) Exclude **[excluded]**
- 4) Also collect [Look for words before ‘Also’ as well as the right form of ‘collect’] **[also collected]**
- 5) Provide **[provided]**
- 6) [Were] give **[given]**
- 7) Include **[included]**
- 8) Collect **[collected]**
- 9) Assess **[assessed]**
- 10) Range **[ranged]**
- 11) [Was] estimate **[was estimated]**
- 12) [Was] convert **[was converted]**

# DDL materials – replacing old gap-fill activities

# DDL Training for EAP?

- <https://edge.edx.org/courses/course-v1:UQx+SLATx+2019/about>
- Free to join!
- Certificate of completion
- Aimed at tertiary academic writing students (and their teachers)

✓ Welcome to the course! Course overview and instructions


✓ Module 1: Dictionaries vs. translation websites vs. corpora

✓ Module 2 - Basic corpus functions and understanding corpus output

✓ Module 3: Using corpora for vocabulary

✓ Module 4: Using corpora for grammar

✓ Module 5: Using corpora to understand writing in your discipline

 | *EDGE* UQx: SLATx Improving writing through corpora: Data-driven learning?

Improving writing through corpora: Data-driven learning?

UQx

Enroll Now

# Corpus-Based Language Pedagogy?

- <https://uq.pressbooks.pub/using-language-data/>
- A new, open source book with 16 ready-made DDL lesson plans
- Lessons suitable for learners A2-C1
- Lessons for L2 English, Portuguese, Spanish
- Swap the tools in here for CorpusMate for more variety!



## **USING LANGUAGE DATA TO LEARN ABOUT LANGUAGE**

A Teachers' Guide to Classroom Corpus Use





# Introducing CorpusMate!

<https://corpusmate.com>

## CORPUS MATE

Enter your search here in topic in mode Search

Show results as  Pattern view  Sentences

Example searches:  
simple words and phrases, e.g. [similarity](#),  
\* (asterisk) for any word, e.g. [in the most \\* way](#),  
? (question mark) for an optional occurrence of a word, e.g. [a small? thing](#) and  
/ (slash) for one of two words, e.g. [in the/a small](#).

This is a beta version.  
[Feedback and bug reports](#) are very welcome!



# Corpus Data – 67 million words in total

**British Academic Written/Spoken English corpora** - The BAWE/BASE corpora (Alsop & Nesi, 2009) is a record of proficient university-level writing and speaking taken from around the year 2000.

**TED Talk Corpus** -This spoken corpus features transcripts of TED talks taken from <https://www.ted.com/talks> spanning a range of disciplinary subject areas but produced for a general, non-specialist audience.

**Simple English Wikipedia** - The entire Simple English Wikipedia (<https://simple.wikipedia.org/>) was selected as a primary component of the written corpus data as it contains texts deliberately written for younger / less proficient readers.

**BBC Teach** - BBC Teach contains transcriptions of learning videos produced for younger / less proficient language users from the BBC Teach website (<https://www.bbc.co.uk/teach>).

**Elsevier OA CC-BY corpus** - The Elsevier OA CC-BY Corpus is an open-access collection of 40,000 scientific articles from a range of Elsevier journals

**Video game corpus (Single Player Offline Corpus)** -The 3.7-million-word corpus contains more than 30,000 texts from games including Divinity: Original Sin II, Fallout 4, the Elder Scrolls V: Skyrim, and the Witcher 3: Wild Hunt.

**Open subtitle corpus** of 2,317 movies of various genres. Citation: J. Tiedemann, 2012, Parallel Data, Tools and Interfaces in OPUS.

**Literary Corpus** of concordances from over 1000 popular novels

# Disciplinary/ Register coverage

Topic	Tokens	Documents
Health and Medicine	15,151,336	9,706
Literature	13,774,000	1,032
Culture, Arts and Music	13,743,488	8,658
Biology	13,101,197	14,464
Science	11,455,444	14,431
Technology	10,610,099	7,443
History	10,418,663	11,050
Physics	9,941,412	6,314
Movie subtitles	9,910,606	2,317
Geography, Agriculture and Environment	9,233,732	5,872
Business and Economics	9,009,150	4,824
Society	8,602,348	4,615
Politics	5,724,692	3,411
Engineering	5,632,372	2,548
Psychology	4,877,355	2,306
Mathematics	4,328,266	9,235
Law	4,284,356	2,687
English Language and Literature	3,952,270	3,995
Chemistry	3,519,327	4,003
Computer Games	3,188,818	18,011
Education	2,421,598	2,655
Architecture, Planning and Design	2,040,315	2,710
No topic	896,808	9,808
Journalism	698,643	611

## Modality

Mode	Tokens	Documents
written	46,631,483	46,126
spoken	21,133,194	23,502

## Register

Register	Tokens	Documents
general	46,718,875	64,469
academic	21,045,802	5,159



# Concordancing

- KWIC is often the central function in corpus tools designed for general purpose linguistic research.
  - Research question might include:
    - How is the term "artificial intelligence" used in different contexts within academic literature?
    - In what contexts does the word "sustainability" appear in environmental policy documents?
    - In what different ways is the word 'freedom' used in political discourse compared to its use in literature?
- KWIC is often a central component of DDL.
  - DDL creates conditions for learners to notice usage patterns in line with a usage-based account of (second) language acquisition (see Römer, 2023).
    - What tense should I use when writing an abstract?
    - How does Shakespeare use the word 'love'?

	File	Left Context	Hit	Right Context
1	AmE06_J07.txt	however, prompted by the need to place the	process	of taking moments in context. Moments of
2	AmE06_J33.txt	education. Successful online teaching is a	process	of taking our very best practices in the clas
3	AmE06_J25.txt	homes. The findings demonstrate that the	process	of assimilation was not uniform for all grou
4	AmE06_J43.txt	nunist Party of Indonesia, which was in the	process	of being eliminated by Soeharto's New Orc
5	AmE06_J65.txt	canon of modern children's literature. The	process	of creating or augmenting professional ide
6	AmE06_J13.txt	lack that protein. Now scientists are in the	process	of figuring out which proteins are coded fo
7	AmE06_J80.txt	and Martin (2004), and Pysek et al. (2004).	Process	of invasion At one level, the issue of invasiv
8	AmE06_J33.txt	participants is formed, through which the	process	of knowledge acquisition is collaboratively
9	AmE06_J51.txt	ference. An inference , in turn, is a mental	process	of linking propositions by offering support
10	AmE06_J25.txt	appropriate for explaining the adaptation	process	of newcomers who arrived in America in th

# Corpus statistics and data visualisation: Pedagogical tools



Tools need to prioritize simplicity over statistical measures.



CorpusMate exemplifies this approach (limited statistical functions) promoting engagement.



CorpusMate presents frequency information and query comparisons in a straightforward, accessible manner.



CorpusMate visualizes keyness across topics using color-coded line bars to indicate relative significance.



CorpusMate underscores the importance of selecting appropriate corpus tools and statistical measures.

Topic distribution of documents

Topic	Documents	Within topic
<a href="#">Culture, Arts and Music</a>	3,299	31.61%
<a href="#">Society</a>	1,636	27.57%
<a href="#">Business and Economics</a>	1,268	25.3%
<a href="#">Psychology</a>	557	24.21%
<a href="#">Politics</a>	816	21.48%
<a href="#">Technology</a>	1,669	21.32%
<a href="#">Education</a>	665	20.46%
<a href="#">English Language and Literature</a>	755	17.99%
<a href="#">Health and Medicine</a>	1,634	16.56%
<a href="#">Law</a>	398	14.83%
<a href="#">Engineering</a>	347	13.61%
<a href="#">Journalism</a>	83	13.58%
<a href="#">Science</a>	1,904	13.14%
<a href="#">Geography, Agriculture and Environment</a>	779	13.05%
<a href="#">Physics</a>	765	12.12%
<a href="#">History</a>	1,279	11.53%
<a href="#">Biology</a>	1,645	11.35%
<a href="#">Architecture, Planning and Design</a>	227	8.38%
<a href="#">Chemistry</a>	263	6.58%
<a href="#">Mathematics</a>	379	4.11%

Click a topic to see pattern/sentence results for that topic.  
**Blue** horizontal bar: the search result is more likely to be used in that topic compared with the average across all topics. **Red** bar: the search result is less likely to be used in that topic compared with the average across all topics. The longer the bar the more/less likely your search result is likely to be used in that topic compared with the average across all topics.

# Use Cases 1: DDL resource book

- <https://uq.pressbooks.pub/using-language-data/>
- A new, open source book with 16 ready-made DDL lesson plans
- Lessons suitable for learners A2-C1
- Lessons for L2 English, Portuguese, Spanish
- Swap the tools in here for CorpusMate for more variety!



## **USING LANGUAGE DATA TO LEARN ABOUT LANGUAGE**

A Teachers' Guide to Classroom Corpus Use



# Use case 2: Integration into EAP courses in Australia

- Module 7: IMRD
- Presentation Assessment: Instructions and Sample
- Module 8: Academic integrity and you: Plagiarism, misconduct and why it is important
- Module 9: Referencing and citation practices: What is it, why bother?
- Module 10: The language of academic writing: Tone and metadiscourse
- ✓ Module 11: Language reference resources: Corpora vs. dictionaries and translation websites.

[Corpora vs dictionaries and translations \(5 Questions\)](#)

Module Activities

[Using the SketchEngine corpus software \(9 Questions\)](#)

Module Activities

[Exploring disciplinary and genre differences with corpora \(6 Questions\)](#)

Module Activities

[Exploring CorpusMate \(1 Question\)](#)

Module Activities

[Module summary and reflection](#)



# Embedding into EAP workshop: Activity 1

1

A) Using the wildcard operator and 'compare results', what 3 NOUNS are most likely to appear following the word **'important'**?

2

B) Using the / operator and 'compare results', which word is more likely to appear following 'academic' – 'writing', or 'writers'?

3

C) Using the ? operator and 'compare results', do we need the word 'on' in the phrase 'evaluate on the results'?

## So far so good? But wait...

- The late 2022 release of OpenAI's ChatGPT and the subsequent explosion in generative artificial intelligence (GenAI) applications have already fundamentally changed the perception of the general public towards the possibilities of human interaction with large language data – something corpus linguists have been attempting to do for decades
- Suddenly, language data – corpora – are back in vogue.
- Yet, the field of corpus linguistics is at a crossroads.
- Despite our best efforts, our field risks being overshadowed by GenAI researchers who are essentially just doing what we as corpus linguists already do, but in a way that has finally captured the imagination of the public.



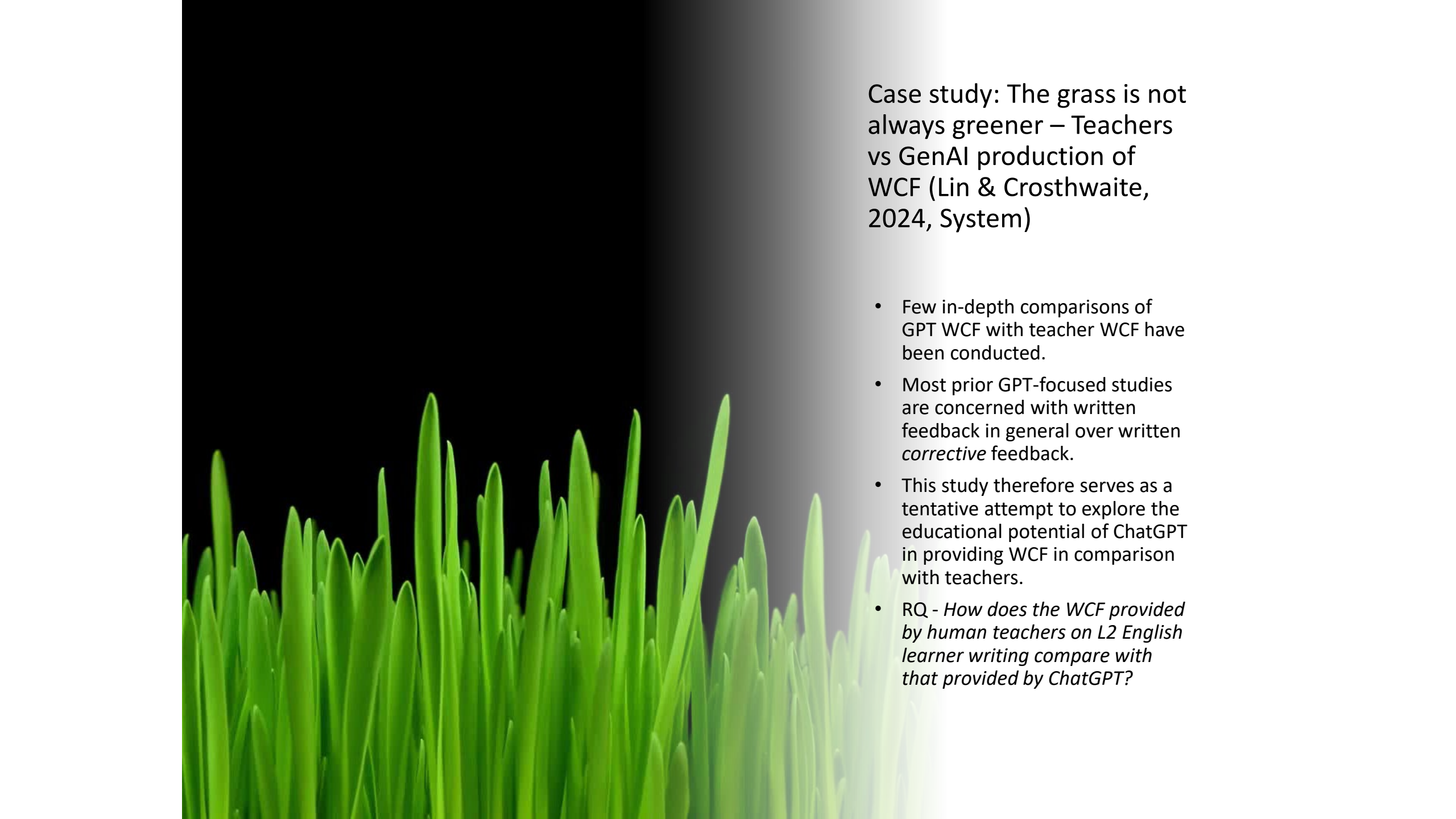
# Affordances and weakness of AI in EAP

## Affordances

- Feedback
- Motivation
- Assessment

## Weaknesses

- Academic language and register
- Plagiarism
- Hallucination
- Passive approach to learning?



## Case study: The grass is not always greener – Teachers vs GenAI production of WCF (Lin & Crosthwaite, 2024, System)

- Few in-depth comparisons of GPT WCF with teacher WCF have been conducted.
- Most prior GPT-focused studies are concerned with written feedback in general over written *corrective* feedback.
- This study therefore serves as a tentative attempt to explore the educational potential of ChatGPT in providing WCF in comparison with teachers.
- RQ - *How does the WCF provided by human teachers on L2 English learner writing compare with that provided by ChatGPT?*



# Method – participants (n=25)

Contexts	Teaching experience	Number	Teaching level
China	3 to 8 years	10	University lecturer
	14 to 20 years	3	High school
	more than 25 years	8	IELTS writing
Australia /UK	0.5 to 1 year	3	High school
	4 to 5 years	1	Adult education University tutor

- Each teacher would provide WCF on three L2 texts containing errors at both local (i.e. grammar, vocabulary) and global (i.e. organisation, coherence)
- This was done using pen and paper to capture indirect WCF forms e.g. underline, circle, etc.
- ChatGPT 4o would also provide WCF on the same texts (each of the three per chat window, new chat window opened to represent new 'participant')

# Prompts (teacher/GPT)

Final prompt	
Teacher participants	<p>The text below has a number of issues with grammar, vocabulary, organization, and ideas.</p> <p>Your job is to provide written corrective feedback on this work in any form you choose so that the person who wrote it can make revisions to make it better and learn the language while doing so. You may use one or numerous strategies to provide this feedback. You should do this by hand so that we can see what you did. Also, briefly summarize in prose some recommendations for the students to improve their texts for revision.</p>
GPT-4	<p>The text below has a number of issues with grammar, vocabulary, organization, and ideas.</p> <p>Your job is to provide written corrective feedback on this work in any form you choose so that the person who wrote it can make revisions to make it better and learn the language while doing so. You may use one or numerous strategies to provide this feedback. You should mark clearly where you made corrections so that we can see what you did.</p> <p>Please also provide the original text with highlights/track changes so we can see the feedback you provided. Also, provide a breakdown of your feedback that students can easily understand to make revisions.</p>

Text 1

1. Why "the" should be deleted here?



Should smoking be banned at all the restaurants? About this, different people hold different

2. do not

views. Some people agree and some people don't agree with it. In my opinion, I agree with

3. What is wrong with the word

it, that is, smoking should be banned at all the restaurants. There have been a large

↳ 4. Paraphrase ideas

number of smokers. Many people have the habit of smoking. What's more, some of them

5. same as Note 2 above

7. at → in public

are addicted to it. They can't live without it. So they will also smoke at public places such as

6. , so

restaurants. But nonsmokers hate it, they hate to smell it. They even complain that they

8. harm + sth

inhale the second-hand smoke in restaurants that would greatly harm to their health.

9. for

Therefore, it is really harmful to people in the restaurant. It will also affect people's appetite

10. those

11.

12. same as Note 8.

I hate them who smoke at the restaurant. Firstly, it does harm to everyone. Secondly, I think

it is an irresponsible behavior. Last but not least, it can pollute the clean air. Nowadays,

more and more people come to know that smoking is bad for people's health. It can lead to

13.

lung cancer, and heart problem. Smokers also decide to give up smoking. Some of them

also think that the law to ban people smoking can encourage them to give up smoking.

Pay special attention to:

1) the usage of "the" and prepositions, such as in and at.

2) Paragraphing

3) paraphrase your ideas, avoid the repetitive use of the same

Pay attention to paragraphing

# Results – content analysis of teacher WCF

- Teachers tended to give both direct and indirect WCF on a range of local and global issues
- They did so fairly uniformly, with little individual variation
- The WCF focus was generally comprehensive (i.e. deal with all errors)

## Results – content analysis of GPT WCF

Overall, ChatGPT produced four distinct WCF provision types, namely:

direct WCF only,

indirect WCF only,

direct/indirect WCF  
together with  
metalinguistic  
feedback (within  
and/or after the  
original text), and

entire text  
reformulation.




These WCF types appeared with varying frequencies despite using the same prompt on the same text across chat sessions

# Direct WCF

For long **(For a long time)** has smoking been a disputable social problem, and I think it's high time that we draw a conclusion and take action towards it. I agree **(with the decision)** to ban smoking at all the restaurants in the country for the following reasons. First, smoking has nowadays **(currently)** become one of the most serious pollutions **(forms of pollution)**. In China, about 3/4 of **the** population is found out **(has been found)** to be the victim of second-hand smoke. And when we find out that the rest 1/4 is who **(are the ones)** that smokes, we have to acknowledge the dangerous situation we are faced with, that is, there is the toxic gas form **(from)** cigarettes in every home. Can we just stand here and see this going on? No! Second, public places can be easily polluted by smoke. So it's reasonable that we first take step **(steps)** to protect these places form **(from)** smoke. We eat in **a** restaurant everyday, and we definitely don't want the disgusting smoke to ruin our appetite while enjoying the delicious food. Think about it, you step into a restaurant and expect to enjoy a good meal but only to find the whole room filled with smokes **(smoke)**, what a bad day! Last but not least, kids are most easily **(most susceptible)** to be harmed by smokes **(smoke)**. Will you want you **(your)** child to be exposed to the toxic gases? So let's take action and make our world a better place!

 Regenerate

# Indirect only

Should smoking be banned at all the restaurants? **(Begin with a clearer thesis statement that reflects your stance.)** About this, different people hold different views. **(This is redundant since it's understood that people have different opinions.)** Some people agree and some people don't agree with it. **(Redundant; can be combined with the previous statement.)** In my opinion, I agree with it, that is, smoking should be banned at all the restaurants. **(Repetitive; merge this with your introductory sentence to form a clear thesis.)** There have been a large number of smokers. **(Unclear relevance. Better to mention the increasing health concerns or changing public opinion.)** Many people have the habit of smoking. **(Repetitive and redundant.)** What's more, some of them are addicted to it. They can't live without it. **(Merge these two sentences for clarity and conciseness.)** So they will also smoke at public places such as restaurants. But nonsmokers hate it, they hate to smell it. **(The transition is abrupt. Consider using "However" or "On the other hand". Also, be careful with word choice. "Hate" might be too strong.)** They even complain that they inhale the second-hand smoke in restaurants that would greatly harm to their health. **(Reword for clarity.)** Therefore, it is really harmful to people in the restaurant. **(This is a repeat of the previous idea.)** It will also affect people's appetite. I hate them who smoke at the restaurant. **(Avoid strong personal emotions in an argumentative piece. Instead, use facts and evidence to support your stance.)** Firstly it does harm to everyone. **(Repetitive; you a**  Regenerate **mentioned harm earlier.)** Secondly, I think it is an irresponsible behavior. Last but not least, it

## Combination WCF

Smoking is widely believed to be a bad habit which will have impact **(an impact)** on both the smoker and the people around. In restaurants where people come to relax and refresh, smoking, the selfish behavior that ruins people's appetite, brings health concerns and shows disrespect, should be completely banned. ~~Smoking should be banned in restaurants since it ruins people's appetite. (Redundant with the previous sentence.)~~ Scientific researches **(research)** show that when people say they love a dish, 70% of their joy comes from the smell of the dish instead of the taste of the dish, which means although the food in a restaurant tastes extremely good, the smell of cigarettes can easily mix **(mask)** the smell up and ruin people's appetite. Smoking also brings health concerns which is why it should be banned in restaurants. People are all aware of the danger that smoking may bring. However, the danger of second-hand smoke is even worse. Smoking in restaurants is forcing so many people around to take in the second-hand smoke which may trigger public health issues. It is not one person the smoker has influenced but close to a hundred. **(This is an exaggerated number; consider revising for accuracy.)** For the health concerns, smoking should be completely banned in restaurants. Finally, smoking in restaurants is disrespectful. In a

# Entire text reformulation

## Corrected Text:

Smoking has long been a contentious social issue, and I believe it's high time we address it. I fully support banning smoking in all restaurants for the following reasons.

Firstly, smoking has become one of the most significant sources of pollution. In China, approximately 3/4 of the population are victims of second-hand smoke. When considering that the remaining 1/4 are smokers, we must recognize the gravity of the situation: toxic fumes from cigarettes permeate many households. Can we stand by idly and let this continue? Certainly not!

Secondly, public spaces are vulnerable to contamination from smoke. Thus, it's logical to prioritize safeguarding these areas. Many dine out daily, and the last thing anyone wants is for intrusive smoke to mar the dining experience. Imagine eagerly anticipating a delightful meal, only to be met with a smoky atmosphere - quite the damper on one's mood!

Lastly, children are especially susceptible to the harmful effects of smoke. Would anyone willingly expose their child to these hazardous fumes?

It's time to take decisive steps towards a healthier environment for all.

## 1. Grammar & Vocabulary:

- \* "For long has smoking" → "Smoking has long been"
- \* "pollutions" → "sources of pollution"
- \* "form" → "from"
- \* "easily to be harmed by smokes" → "especially susceptible to the harmful effects of smoke"
- \* "you child" → "their child"

## 2. Organization:

- \* Improved introductory sentence for clarity.
- \* Divided the text into paragraphs to clearly differentiate between main points.

## 3. Ideas:

- \* Simplified the argument about the population in China to make the point more concise and clear.
- \* Used a more direct tone to stress the importance of the issue and the urgency for action.

## 4. Redundancy:

- \* Streamlined sentences to avoid repetition and made arguments more succinct.

🔄 Regenerate



# AI's Role in Motivation and Engagement

It is not altogether uncommon for EAP students to lack motivation to partake in EAP instruction, given oft-reported issues with low language proficiency, insufficient time, and a focus on composition over other skills e.g., speaking (e.g., Afshah & Movassagh, 2016).

The potential for AI to level the linguistic playing field while promoting self-efficacy in EAP learners is massive, and EAP practitioners would do well to note.

- Yang and Kyun (2022) found that AI enhances language learning and facilitates greater collaboration among learners, while integrating AI tools with teacher guidance leads to improved learning outcomes and helps achieve higher-order educational goals.
- Chan and Hu (2023) observed that incorporating GAI into L2 writing brings advantages for L2 writers in terms of reducing the time spent on writing while alleviating frustration and anxiety.
- Teng (2024) found ChatGPT had a 'significant effect' on EAP students' writing motivation, self-efficacy, engagement and intention to write collaboratively.
- Wang (2024) provided training in the affordances of GAI tools to assist with brainstorming, seeking out sources, and exploring word meaning. This training significantly improved students' efficacy for writing in English and their perception of the quality of the English language education they received.

Clearly, the research to date suggests that, if nothing else, the incorporation of AI into EAP practice has resulted in increased student engagement with academic writing as a discipline, which can only be a good thing.

# AI in Assessment Practices

The entire higher education sector is struggling with the challenges posed by AI regarding ethical considerations around AI use in assessment and assessment integrity in light of AI (Kutbi et al., 2024).



For EAP, the implications of what comes next are profound, in that an AI-influenced shift from academic *writing* (i.e. essays) as the primary form of university assessment to other *non-written* forms of assessment (i.e. video reflections) stand to make much EAP instruction obsolete.

# Academic language and register

- Despite claims that generative AI can write an entire academic research paper from scratch (Hsu, 2023), corpus linguistic research has already pointed out a range of differences between the academic register typically produced by software such as ChatGPT and that of human academic writers.
  - **Kong and Liu (2024)** – Significant differences across human/GAI in the types of rhetorical moves, move patterns, and frequency of move embedding
  - **Berber-Sardina (2024)** – Significant register variation between human/GAI under MDA approaches
  - **Mizumoto et al. (2024)** – Significant variation across lexical diversity, clausal syntactic complexity, embedded syntactic complexity, complex nominals, modals, epistemic markers, and discourse markers
  - **Yang et al. (2024)** – Significant variation across types of textual, interpersonal and marked topical themes for SFL
  - **Jiang and Hyland (2024)** – Significant variation across 3-word lexical bundles in a corpus of ChatGPT-produced academic essays with those of British students - ChatGPT used a narrower, repetitive range of such bundles, with less evidence of bundles used to convey epistemic stance and authorial presence compared with human student writers

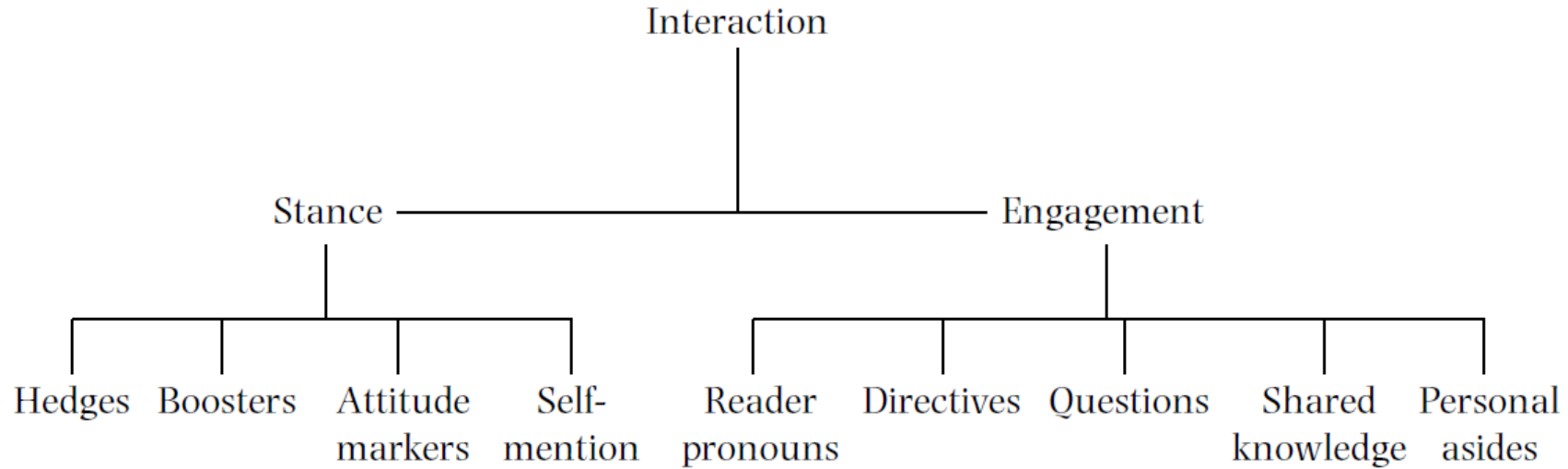


FIGURE 1. *Key resources of academic interaction*

**Case study: Stance  
and Engagement  
(Mo & Crosthwaite,  
in prep)**

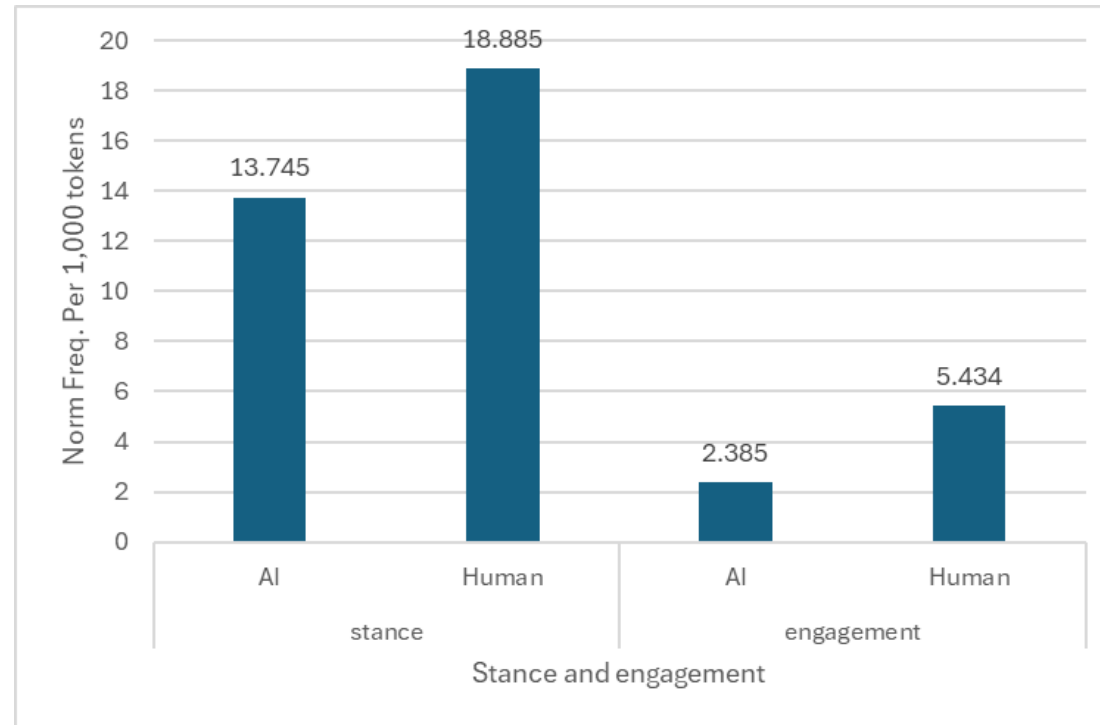
- “put succinctly, every successful academic text displays the writer’s awareness of both its readers and its consequences” (Hyland, 2005 p.174).
- This is demonstrated through use of *Stance* and *Engagement* features

# Research questions

RQ1: How does human- and GenAI-produced academic writing convey academic stance and engagement?

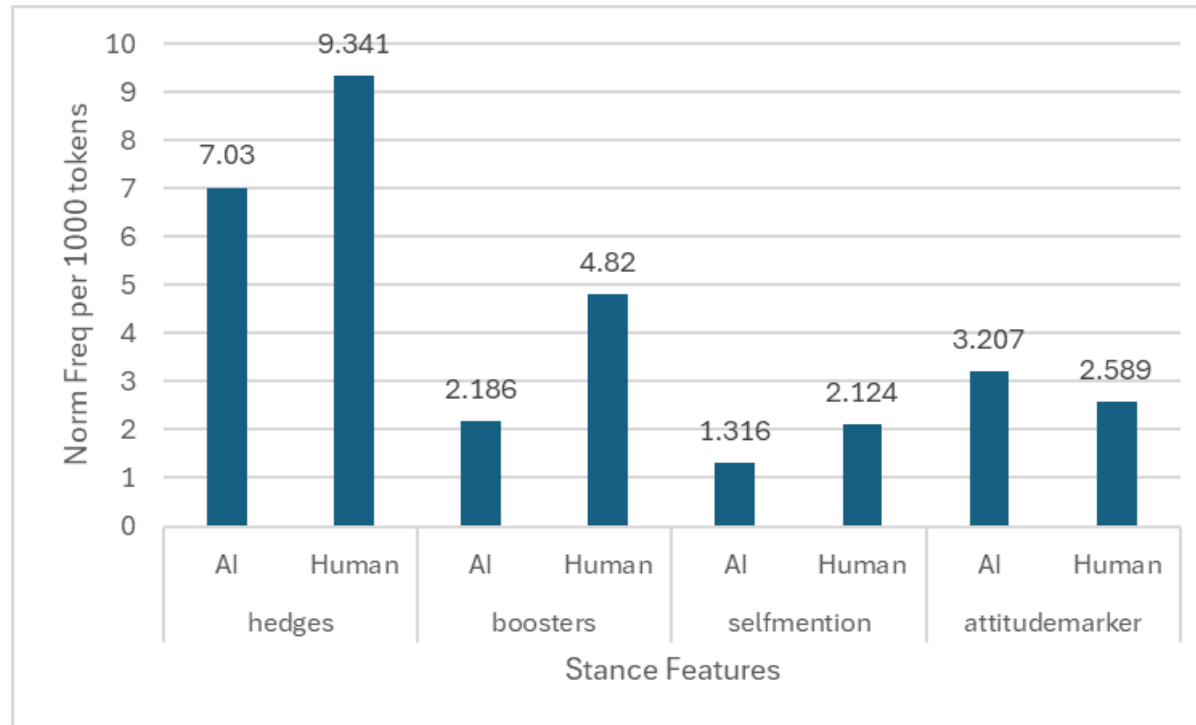
RQ2: Can GenAI-produced academic writing approximate human-like production of academic stance and register features across disciplines?

RQ3: To what extent do different GenAI models (i.e. ChatGPT, ERNIEBot, MetaAI) vary in their use of stance and engagement features in academic writing as compared with human academic writing and each other?



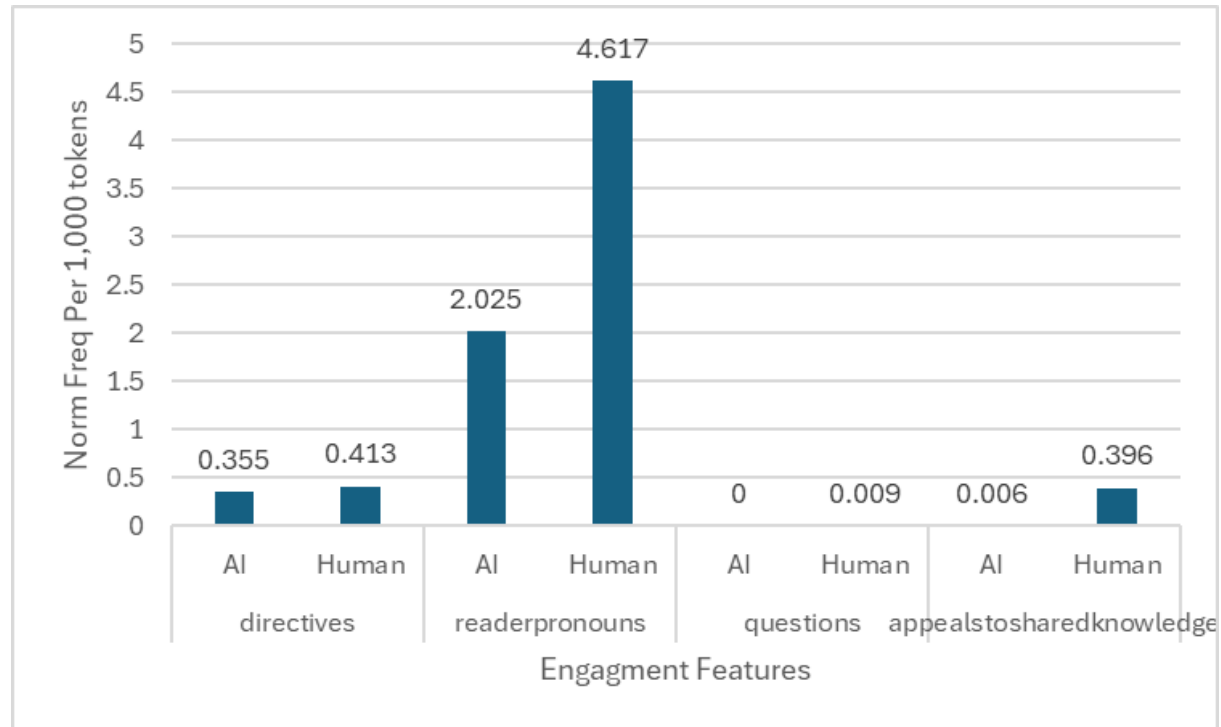
## Results RQ1 (Stance and Engagement in human vs GAI production)

- Human writers use more explicit stance ( $H=10.16$ ,  $z=-3.18$ ,  $p<.001$ , Rank  $\epsilon^2 = 0.085$ ) and engagement features ( $H=5.19$ ,  $z=-2.28$ ,  $p=0.023$ , Rank  $\epsilon^2 = 0.040$ ) than GAI



## Stance features

- Humans are significantly more likely to use hedges ( $U=55.83$ ,  $z=-2.58$ ,  $p=0.012$ , Rank  $\epsilon^2 = 0.053$ ), and boosters ( $U=51.91$ ,  $z=-4.68$ ,  $p<.001$ , Rank  $\epsilon^2 = 0.185$ ) than GAI



## Engagement Features

- Significant differences were found however in the use of appeals to shared knowledge (U=52.15, z=-7.33, p<.001, Rank  $\epsilon^2$  = 0.452) with a strong effect size



# Wordings

Human Hedges (p<.0001)	GenAI Hedges (p<.0001)	Human Boosters (p<.0001)	GenAI Boosters (p<.0001)
Would, perhaps, seems, might, quite, seem, probably, assumed, appear, suggested, almost, mainly, apparently	Often, typically, suggesting	In fact, clearly, indeed, never, believe, actually, thought, shows	
Human Attitude Markers (p<.001)	GenAI Attitude Markers (p<.001)	Human self- mention (p<.001)	GenAI self- mention (p.<001)
Clearly, interesting, obvious, interestingly, unfortunately, correctly	Significant	I, my, this paper,	Our, this essay

	discipline	N	Mean	SD	SE	Coefficient of variation
AI	Archaeology	15	2.45	2.987	0.771	1.219
	Classics	15	0.741	0.882	0.228	1.191
	English	15	1.843	2.595	0.67	1.408
	History	15	0.99	1.465	0.378	1.48
	Linguistics	15	2.099	1.63	0.421	0.777
	Philosophy	15	6.19	6.009	1.552	0.971
Human	Archaeology	5	1.344	0.667	0.298	0.496
	Classics	5	0.324	0.48	0.215	1.482
	English	5	3.494	1.402	0.627	0.401
	History	5	2.792	1.563	0.699	0.56
	Linguistics	5	2.61	1.59	0.711	0.609
	Philosophy	5	22.042	12.49	5.586	0.567

## RQ2 – Disciplinary variation (Engagement)

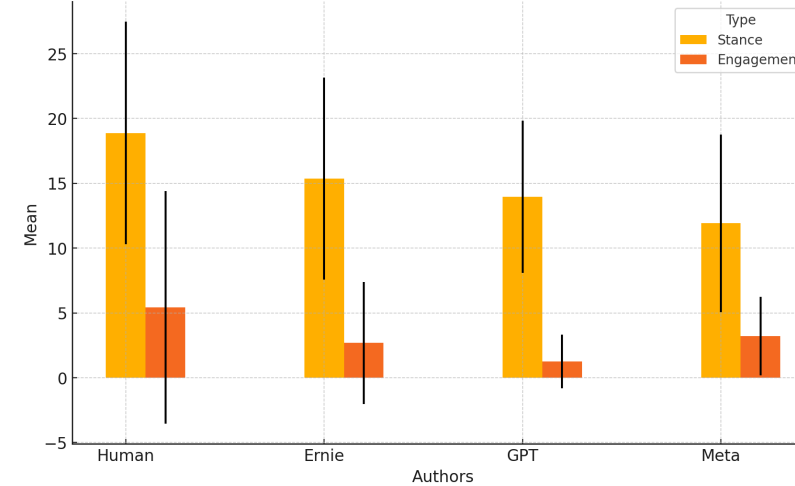
- Significant differences found for Philosophy discipline in reader pronouns and appeals to shared knowledge
- These are prominent in that discipline (Hyland, 2005)
- GAI was unable to capture this – not enough training data?

## RQ3 – Comparisons across three LLMs

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- Use of stance features significantly lower in MetaAI texts, particularly for hedges
- Use of engagement features varies across humans and the three LLMs individually

Comparison of Mean Across Stance and Engagement by Authors (with Error Bars)




# Summary

Overall, the study has found significant variation in the production of stance and engagement features between human- and machine-produced academic discourse



This includes disciplinary variation in the use of said features, as well as variation across the three large language models (LLMs) used in the present study.



The findings are likely to have implications for stakeholders involved on EAP courses, EAP students themselves, LLM developers, and those looking to detect LLM-produced academic text.

# AI in EAP: Future Directions



The impact of AI technology will be felt for some time to come.

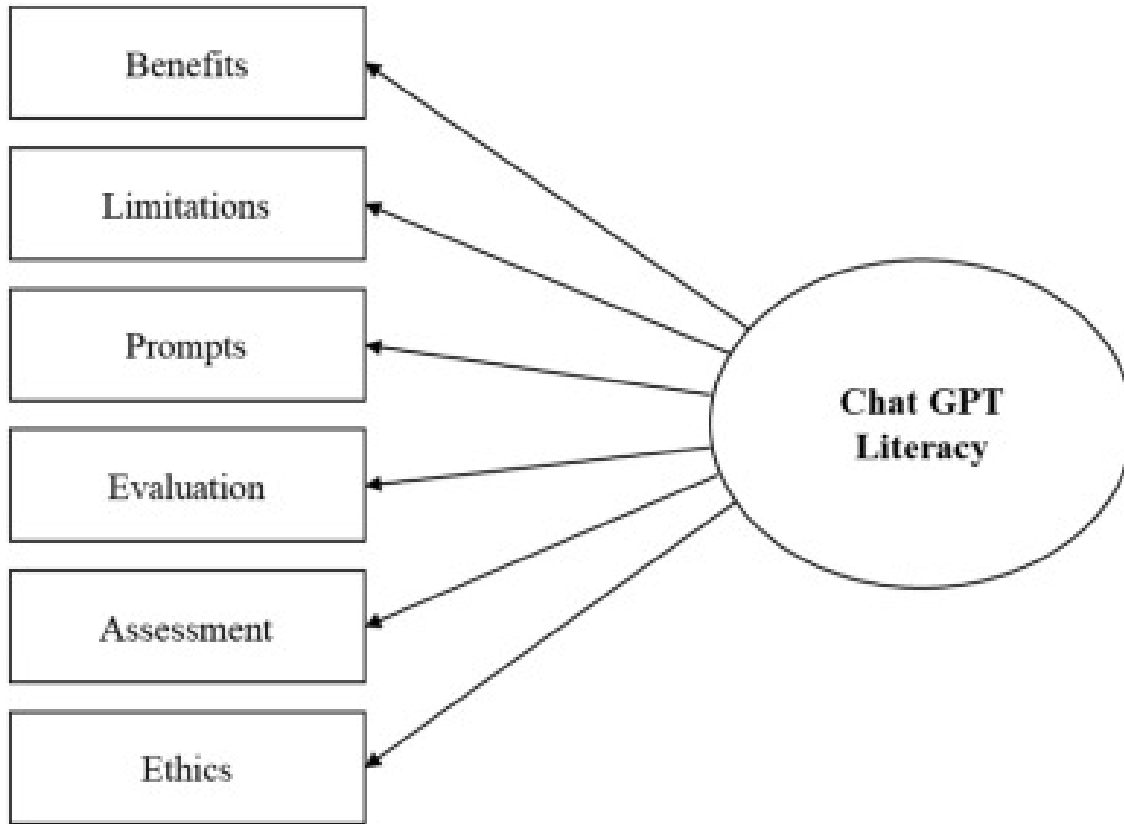


It will therefore be vital for EAP practitioners to move beyond simple debates around whether AI should be 'allowed' in EAP, to how to successfully integrate its use.



Debate must also consider how the field of EAP can itself remain relevant as the technology continues to move forward.

# EAP teacher training?



- EAP practitioners will need to be fully prepared for this paradigm shift.
- At the time of writing, however, the field is still unprepared – see Kohnke et al.'s (2023) investigation of EAP teachers in Hong Kong who, despite familiarity with a range of AI tools, considered themselves as lacking the pedagogical knowhow to successfully integrate their use into professional practice.
- Ma et al. (2024) developed a ChatGPT Literacy framework for language professionals spanning six constructs including understanding the benefits and drawbacks of ChatGPT, successfully conducting GPT-assisted assessment, critically evaluating ChatGPT content, understanding the ethics of ChatGPT use, and developing proficiency in prompt engineering.
- Professional development programs incorporating these constructs can help facilitate the incorporation of GAI tools into pedagogical practice through co-construction and collaborative learning.
- Tailored institutional and disciplinary support is key in meeting this challenge, with requests for self-paced targeted pedagogical training to be embedded within continuing teacher professional development, peer support, and renewed, forward-facing policy innovations.

# Integration of GAI into EAP?

- Certain inroads into the integration of GAI into EAP curricular are already underway
  - Tseng and Lin (2024) incorporated ChatGPT 3.5 into a tertiary EAP writing course, finding by the end of the course that “the application of AI can enhance the learning experience without compromising the individuality of student expression” (p.78).
  - Ngo and Hastie (2025) embedded a 10-week generative AI literacy module within an EAP program at a Scottish university, using a framework the authors coin as AI for academic purposes (AIAP). Training in the principles of AIAP resulted in improved critical evaluation of AI-generated content, increased understanding of ethical AI use, and new affordances of AI for EAP beyond proofreading or content generation.
- Clearly, more research is needed on whether and how the incorporation of AI into EAP affects provision at the curriculum level, and the next few years will make for interesting reading indeed
- That is, if EAP as we know it is still around...

